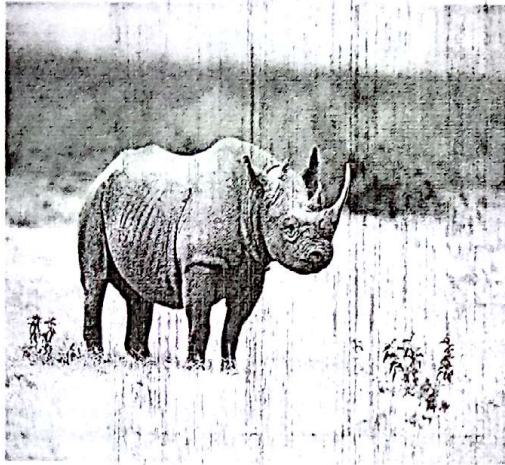


Prep2

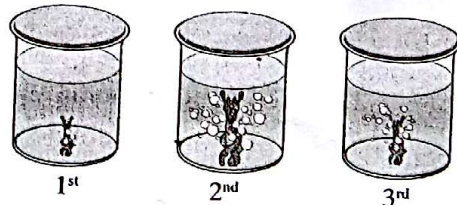
Write in each figure its name and classifying each (fossil -endangered species -or extinct species )



## Activity 8 illustrate water pollution".

### Steps :

- Put some tap water in 3 beakers, then add some green water (water contains green algae) to each of them (as shown in the opposite figure).
- Add two spoons of a detergent to the first beaker.
- Add some agricultural fertilizers to the second beaker.
- Leave the third one without any additives.
- Cover the three beakers and leave them in a sunny place for some days.



### Observation :

- The growth of algae in the 1<sup>st</sup> beaker is slower than that in the 3<sup>rd</sup> beaker.
- The growth of algae in the 2<sup>nd</sup> beaker is faster than that in the 3<sup>rd</sup> beaker.

### Conclusion :

- When we add a detergent to water, the green algae grow more slowly leading to a lack of the available food for fish so, fish will die causing water pollution.
- When we add agricultural fertilizers to water, the green algae grow faster consuming more oxygen in respiration process leading to a lack of dissolved oxygen in water so, fish will die causing water pollution.



## Practical 2nd prep.

### Activity 1:

Using the tools in front of you,

How can you explain the phenomenon of Global Warming?

#### Tools:

2 empty soda bottles - 2 thermometers - water - vinegar - sodium bicarbonate powder.

#### Steps:

- Put amount of water in bottle (1) and equal amount of vinegar in bottle (2).
- Put a thermometer in each bottle.
- Put some sodium bicarbonates in bottle (2) and close it at once.
- Put the 2 bottles in sunny place.

Observation: the temperature is higher in bottle (2).

Conclusion: the increase in the concentration of  $\text{CO}_2$  leads to increasing the temperature.

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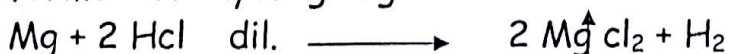
### Activity 2:

Explain by an activity the effect of diluted Hydrochloric acid on both, sulfur and magnesium and mention the symbolic balanced equation for the reactions?

- On adding diluted Hydrochloric acid to sulfur, no reaction takes place.



- On adding diluted Hydrochloric acid to magnesium, Magnesium chloride salt is formed and hydrogen gas evolves.



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### Activity 3:

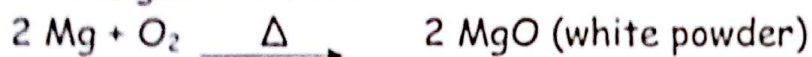
Using the tools in front of you,

- Explain the result of burning of magnesium strip in air,
- What the produced substance,
- on dissolving the produced substance in water, what is its effect on violet litmus solution?
- Write the symbolic balanced equation for the reactions?

**Tools:** magnesium strip - holder - matches - beaker with water - violet litmus solution.

**Steps:**

- On burning magnesium strip in air, it combines with atmospheric Oxygen producing white powder of magnesium oxide.
- On dissolving the powder in water and examine it with violet litmus solution it changes into blue.



**Conclusion:** magnesium oxide is a basic oxide.

**Activity 4:** Identify the pictures in front of you,

Dinosaur -Dodo bird - Quagga animal - passenger pigeon -Tasmanian cat- golden frog.

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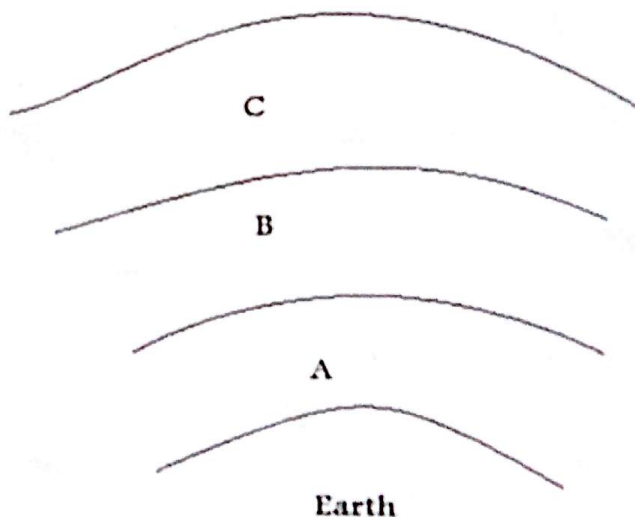
**Activity 5:**

In front of you a slide for atmospheric layers,

Answer the following?

- 1- What is the name of layer (A)?
- 2- What is the name of the coldest layer?
- 3- What is the name of the warmest layer?
- 4- Where does Ozone layer lie?

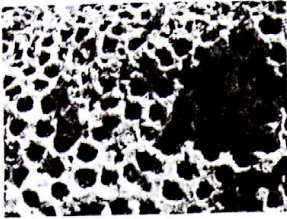





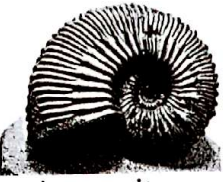


- 1- Troposphere.
- 2- Mesosphere (C).
- 3- Thermosphere.
- 4- In stratosphere ( B).



**Best Wishes**

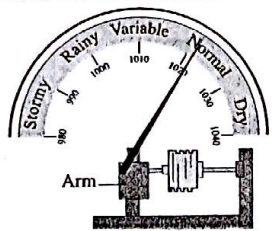


## Classify the type of fossils and its name

Examples of traces :	Examples of remains :
  <p data-bbox="268 495 467 528">Worm's tunnels</p> <p data-bbox="544 488 770 521">Dinosaur's foot print</p>	  <p data-bbox="815 405 1038 483">Remains of a dinosaur's skull</p> <p data-bbox="1114 398 1281 477">Remains of shark's teeth</p>
Examples of solid cast fossils :	Examples of complete body fossils :
   <p data-bbox="411 757 627 790">Nummulites fossil</p> <p data-bbox="284 1014 475 1048">Trilobite fossil</p> <p data-bbox="531 981 683 1048">Ammonites fossil</p>	  <p data-bbox="842 943 1010 976">Amber fossil</p> <p data-bbox="1106 936 1329 969">Mammoth fossil</p>

## Important drawings :

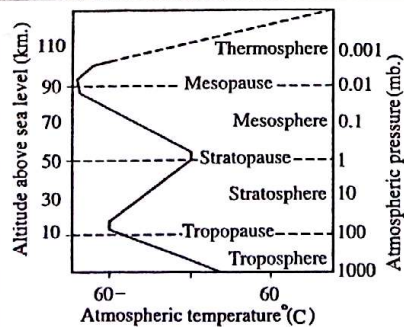
### 1 Aneroid instrument



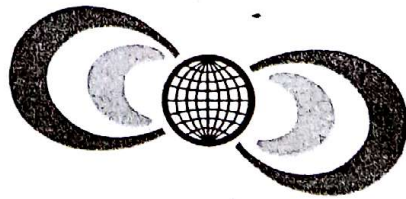
### 2 Altimeter instrument



### 3 Layers of atmosphere



### 4 Van-Allen belts





## Activity 6 To prove that water is a good polar solvent.

### Steps :

1. Put an amount of water in three glass beakers.
2. Put a spoon of sugar in the first beaker and a spoon of table salt in the second and some drops of oil in the third with stirring.

### Observation :

Both sugar and table salt dissolve in water, while oil doesn't dissolve.

### Conclusion :

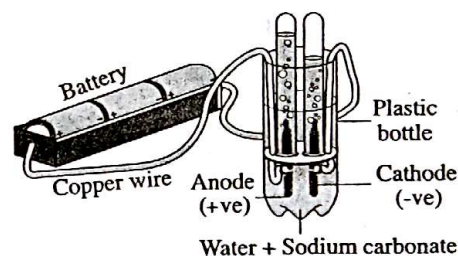
- Water is a good polar solvent so, it has a great ability to dissolve most ionic compounds such as table salt (sodium chloride).
- Water can also dissolve some covalent compounds such as sugar that can form hydrogen bonds with it.
- Some covalent compounds such as oil can't dissolve in water as they can't form hydrogen bonds with water.

## Activity 7 Water electrolysis "

### Steps :

Connect the circuit as shown in the figure, then close it for 10 min. :

1. Compare between the volume of the evolved gas above the negative pole (cathode) and the volume of the evolved gas above the positive pole (anode).
2. Approach a glowing splint to the gas evolved at both cathode and anode.



### Observation :

1. The volume of the evolved gas above the cathode doubled the volume of the evolved gas above the anode.
2. The evolved gas above the anode makes the glowing splint more glowing, while the evolved gas above the cathode burns with a blue flame and makes a pop sound.

### Conclusion :

The acidified water decomposes by electricity into :

- **Oxygen gas** evolves at the **anode** (because oxygen ions are negatively charged).
- **Hydrogen gas** evolves at the **cathode** (because hydrogen ions are positively charged).
- The ratio between the produced hydrogen gas and oxygen gas is about (2 : 1) by volume because water molecule ( $\text{H}_2\text{O}$ ) is composed of two hydrogen atoms and one oxygen atom.

